AMERICAN FARMER.

RURAL ECONOMY, INTERNAL IMPROVEMENTS, PRICES CURRENT.

"*O fortunatos nimium sua si bona norint*
"*Agricolas.*" . . . VIRG.

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AGRICULTURE.

From the Memoirs of the Philadelphia Agricultural Society.

Notices for a Young Farmer,

Particularly one on Worn Lands, &c. &c.

WITH NOTES BY THE EDITOR OF THE FARMER.

(*Concluded from No.* 13, *page* 98.)

Dogs to be trained discreetly, to prevent bad habits; and especially in regard to *sheep-killing*. Carelessness in those who leave temptations in their way, a principal cause of this propensity.

XXI. *Familiarize your young dogs* with *sheep*, and correct them when they chase or annoy them, and they will protect, in place of injuring your flocks. Dogs become sheep-killers, by neglect in training them. Starved curs prowl for prey, and become savagely mischievous. Those who do not pen their sheep, and bring them home at nights for protection, but leave them in distant fields, expose victims to such dogs; and they ruin even innocently inclined dogs, by throwing temptations in their way. They have no right, therefore, to complain of injuries. Good and faithful dogs are as necessary on farms, as sheep.

Accustoming dogs to feed on raw and bloody food, renders them inclined to seek it. The sight or smell of blood, infuriates many animals. Horned cattle are peculiarly affected by it. Not only dogs, but horses, operated on by the sight or smell of blood, have been known to be seized with fits of sudden rage; and instances can be related, in which they have dangerously attacked persons whose garments had been stained with, or smelt of blood, although commonly familiar with them. Animals (man included) become habitually and culpably fond, of what, at first, may have even excited antipathy and disgust. Sheep-killing begins in wantonness, and ends in vice, and is a species of canine madness. The confirmed blood sucking sheep killer, acquires a wild shrill bark, different from that of other dogs. Shameful negligence in not burying dead carcasses, not only reflects disgrace on those who permit such nuisances, on other accounts, but the dogs of a whole neighbourhood are often ruined, by such temptations to savage propensities.

Farm *dwelling houses*, and other buildings; observations concerning them, and the situations in which they are placed. *Stables* for horses and cattle. *Pens for swine*, and mode of feeding them. *Cleanliness* as to all places where live stock are kept, recommended.

XXII. Do not commence with erecting *costly buildings*; but apply your time, efforts, and pecuniary means, to your farm; and shift on with tolerable accommodations, until your fields warrant your providing better. Want of calculation in this regard, when their funds have been limited, has injured and depressed many beginners in farming, who have erected expensive houses, which have exhausted their means of improving their farms; and capacious barns, with little to store in them. If difficulties in their affairs compel them to sell, they find, that, however expensive may have been the buildings and accommodations, a poor farm must be parted with at a very inferior price; and the buildings are seldom duly appreciated, in a calculation generally made on the value *per acre*. When the farm becomes productive, it seldom, if ever, happens, that the barn is too large. The most general mistake is, that it is too small; and most commonly, the floor is too narrow for treading out crops with horses, or using our simple machines for threshing; which, though not so powerful, are tolerable substitutes for the complicated and expensive, however valuable, inventions, with which, in some parts of Europe, grain is threshed out. In the moist countries of Europe, wherein there are late harvests, stacking is preferred to confining grain in barns, which is said to be injurious on account of retaining dampness, and promoting mouldiness in both grain and straw. But in our climate, favouring early harvests, with generally fine weather, no such consequences follow; and barns are all essential. In the southern parts of our country, they are dispensed with too negligently and unprofitably. The great farmers tread out their grain from the harvest field, or from stacks, as promptly as possible. By this means, the grain is at market before the moth fly is grown sufficiently to injure the flour, and thus they have almost conquered that pest. And this, in some degree, justifies their lack of farm buildings; save that in covers for their farm stock, they are lamentably deficient.

Let your *dwelling house* and its appendages, be to leeward, (as it respects commonly prevailing winds, those in winter especially, when fires are constant) of your barn and stack-yark; and sufficiently distant from them to avoid accidents by *fire*. Lights should be, as much as possible, forbidden in your barn and stables, and suffer not the reproach of omitting the common guards to your buildings, against lightning. Their being placed near water conveniences, may answer some purposes; but this should generally be avoided, especially if streams be large and dull, or collected in stagnant pools. Low and damp sites for dwelling houses, generally produce fatal consequences to their occupants. Leading distant springs or streams to your homestead, or digging wells may be costly and inconvenient; but health and comfort are thereby ensured. When buildings and other improvements are placed too near *mill-dams*, or *rivers*, and streams *subject to floods*, repentance comes too late, after ruinous consequences have suffered by such want of foresight and calculation.

Stables for horses should not be too close. Diseases are generated by confined air; and horses kept too warm cannot safely encounter cold and wet. Fatting cattle and sheep in sheds open to the south, and suffered, in good weather, to run out in yards, are always hardy, healthy, and thriving. *Swine* kept in too warm, and more so in filthy pens, are ever subject to diseases and unprofitable feeding. There is no greater mistake, than that of *gorging* swine, when first penned for fatting. They should, on the contrary, be moderately and frequently fed; so that they be kept full, but do not loathe or reject their food; and in the end, contract fevers and dangerous maladies, originating in a hot and corrupted mass of blood; against some of which, *dry rotten wood*, as an absorbent, and, some allege, *smith's cinders*, thrown in their pens are preventives. In airy and roomy, yet moderately warm pens, paved or boarded and often cleaned, they are healthy and thriving. They show a disposition to be cleanly, however otherwise it is supposed; and they always drop their ejections in a part of the pen different from that in which they lie down. No animal will thrive, unless it be kept clean. When cleanliness becomes habitually practised, it is easy to preserve it. But if filth be suffered to accumulate, the removal is a *task*—it is some and procrastinated.

Accounts of receipts and expenditures, and *Notes* of farming occurrences, to be kept.

XXIII. Keep accounts of all your expenditures and receipts; and notes of remarkable occurrences on your farm. Recording even your errors will benefit yourself in future avoidance and become warnings to others. Your successful practices will be examples. You owe it to yourself, your children and your country, to register and promulgate them.

Reading on agricultural subjects, recommended.

XXIV. Read, and do not slight either foreign or domestic books of reputation for principles and practice, on agricultural subjects. Climates may and do differ; but principles are invariably the same. If you have, as you ought, a desire to be well acquainted with your art, gain some knowledge of subjects elucidating its principles and particularly of *chemistry*, as connected with agriculture; although you need not aim at being a perfect Chemist, nor qualify yourself as a disputant on theories and vain and unprofitable discusssions, which produce no beneficial result; but, on the contrary, bewilder those to whom information of plain principles and facts, and practical lessons, are the most necessary.

Home's Principles of Vegetation, *Darwin's* Phylologia, *Hunter's* Georgical Essays, *Anderson's* Essays, *Lord Dundonald's* Connexion of Agriculture with Chemistry, *Davy's* Agricultural Chemistry, are among the books, giving a general view of principles; and books of practice you can obtain at pleasure. The former you can use as lawyers read *Blackstone's* Commentaries; and the latter as they apply to reports for detailed and practical information.

Experiments useful and necessary: but settled practice should not be disregarded. *Profits* of farming; observations respecting them.

XXV. *Experiments* are highly commendable, but do not set out as an habitual experimenter; as if husbandry were a new art, (however defective it may be) and every thing depended on your own discoveries. In such case, you would consume your labour, time and means, which should be devoted to settled and known practice, in pursuing your own suggestions: or in clearing up your doubts on the experience of others, most probably unprofitably and unnecessarily. Listen to intelligent and successful practical men, whom you will easily distinguish among your neighbours. Do not imitate the exclusive self approbation of too many farmers, who impatiently and heedlessly wait whilst information is offered, until they can relate what *they* are doing, and have done. Yet where even a failure will be attended with no serious injury or expense, fear not to attempt an improvement or discovery, although the endeavour may be unprecedented. It most assuredly requires experiment to adapt foreign practice to our climate and circumstances; and to make essays to change or meliorate our defective usages. But we are not so far behind, as that most of the common operations are not well understood and reputably executed.

It is not intended to say any thing on the subject of *profits* of husbandry, as these depend so much on the circumstances both of the farmer and the farm, accordingly as its culture is applied to grain or grass, or mixed husbandry, and the management and economy with which its business is conducted; that no calculation can be made, on general principles, with

any degree of correctness. Those, however, who do not personally labour, and have every thing to hire or purchase, should moderate in their expectations; and for them a grazing farm would be the most eligible. But a *farmer* on his own farm, as is the case with most of our husbandmen in this happy country, wherein they are burthened with no tithes, heavy rents and oppressive poor rates; and pay, comparatively with other countries, light taxes; helping themselves and assisted by their families;—thus avoiding the payment of much wages to hirelings; and, of course not subjected to their caprices, vices, idleness, and defalcations; contented with wholesome subsistence, in great plenty, and reasonable profits; can live well and independently, with even a tolerably good system of husbandry; and sit "every man under his vine and under his fig tree, and none shall make them afraid."

Those who wish for enjoyments comparatively elegant and luxurious, must depend on other resources than those of a mere farmer on a moderately sized plough farm, producing chiefly grain; or even a grass farm of reasonable extent; but with every additional resource, they will not be a jot the happier in real comforts, though their habits may require artificial substitutes for them.

A farmer can be a well informed *gentleman*, according to the true import of that appellation, without the imitative and shadowy pretentions of many who affect that character, which does not consist in expensive display. Let his motto be, *esse quam videri*; to *be* and not merely to *seem*; and his station in society will be respected, as it merits, for useful actions and he may be distinguished for politeness and suavity of manners, without the tinsel of affectation and insincerity. He will be more esteemed, the more he accommodates his wants and habits in his circumstances.

Poultry.

XXVI. A farm homestead is enlivened by *poultry*; and family comforts are much increased by their eggs and young. But their numbers should be kept within bounds, and their kinds prudently selected, as some are less inclined to wandering and mishief, than others. *Turkeys* are the most mischievous and offensive; and *geese* are predatory trespassers, very voracious, and injurious to grass grounds. It is questionable, whether the balance of the account, giving credit for their market price, (and some believe it might be doubled) be not much against both. So that, in many situations, it would be, perhaps, most economical, if they *must* be had, to buy them for the table. Dung-hill fowls, of innocent breeds are preferable to either. Confining these too much has not been found eligible; and high feeding is not promotive of, but checks, fecundity. It also destroys one of their uses, by making it less necessary and desirable to them to seek for and destroy insects and other pests to your garden and fields. They thrive better when kept in good condition, and by moderately feeding them at home, they return from wandering, and preserve their domestic habits. They often injure the garden; but some gardeners think that they do more good than harm, by devouring insects and noxious vermin. The absence of *wild birds*, whether owing to irregularities of seasons, or wanton destruction, is often seriously felt in the increase of insects on our farms. The depredations of *birds* are fully compensated by the services they render to us; whilst, for their own support, they are preying on our enemies. Our *poultry* are entitled to regard on this account. They may be broken of bad habits, by checking intrusions, and feeding them exclusively, in places distant from the garden. Those who find them ungovernable and too mischievous, may keep them in poultry yards, or banish them entirely. *Pigeons* are seriously mischievous, and should either be kept in small numbers, or not at all. *Guinea fowls* lay abundance of eggs, though in some cold countries it it otherwise. But they are inveterate enemies to other poultry. Fowls, however, laying the most eggs, which they can do without frequent congress with males, or are not remarkable for breeding, many of their eggs being barren. Those laying fewer eggs, more frequently incline to incubation. Turkeys among tobacco plants, are valuable for their feeding on the worms which infest them. Mr. Coke of Norfolk, in England purchased hundreds of *ducks*, for worming his turnips. Whatever may be their value, in these disgusting however useful instances of filthy feeding, it would require the absence of all our prejudices for us to relish them at our tables. Those who bought Mr. Coke's fat ducks, were happily ignorant of the means by which the *delicacy* was rendered merchantable; and no objections are made to feasting on turkeys thus fed, by those whom habit has reconciled to such repasts. Good eaters are, however, too busily employed on the subjects before them, to suffer the intrusion of over-nice associations of ideas.

Hen houses and nests should be kept clean; nor should they be kept too close and warm. Filth generates vermin, and heat is injurious both as it respects health generally, and particularly at the time of incubation, when overwarmth in the hen is prejudicial to hatching, insomuch that she frequently turns, and often leaves, her eggs to cool. Be careful to guard against the access of egg-suckers. Minks, rats, and weazles, are greatly so; and they and other such vermin are destroyers of poultry. Dogs are not much behind them in this propensity, and should be chastised and broke of the habit of egg-sucking, when young, they otherwise retain it through life.

The dung of poultry is well worth your care. It is so powerful, that it would fertilize, if even sown by handfuls and it must therefore be thinly scattered.

It must be seen, that many of these observations, as they relate to some kinds of poultry, apply to farms in a thickly populated neighbourhood where range is trespass. The kinds most noxious in confined situations, may be profitably and extensively raised in other districts of our country, wherein circumstances favour the breeding them. Too many cocks should not be kept. Their ferocity in combat, (the more frequently shown when extra numbers contend for the same object) is not a proof of their fecundating properties; and the gentlest and best formed should therefore be selected. One for every eight or ten hens will be sufficient. The others may be emasculated, and thus improved as an esculent highly valued where the practice is common. *Capons* are rare among us; but it is unaccountable why this addition to our fare has not been more attended to. *Hens* hatch only one brood, or two at most, in a season. A *capon* may be taught to hatch and most carefully rear and hover, several broods in the same year.

Runty and mean breeders, of either sex, should be killed. It is scarcely possible to prevent different breeds, in the same yard, from mixing. But if breeders are sizeable, it is by no means a subject of regret, that they communicate with each other. *Crossing* most commonly improves poultry, as it does other animals as well as plants. But they must not be of a distinct species, for some kinds produce, by mixing mules or hybrids which will not breed. The Muscovey with the common duck, affords a frequent instance of hybridious, and commonly barren, progeny.

A singular instance of the benefits derived from poultry, was presented to a number of respectable witnesses of the fact, some years ago, in a part of an unseated country in Pennsylvania, far removed from population. A solitary New England settler, was found clearing the woods and building a cabin for the reception of his family, who were to follow him with *the rest of his stock*. He had brought a number of *poultry*, and a flock were seen around him, which by their eggs, furnished the chief part of his support; and with this sustenance, he declared he was perfectly enabled to labour. Occasionally he procured some grain from distant settlements, which the fowls sparingly shared with him. This, and the precarious supplies of the forest, kept them and him in good plight. They never wandered, but always associated with him, as well for protection as from habitual attachment.

Farming instruments, implements and tools to facilitate agricultural operations: Some observations respecting them.

XXVII. Few farmers attend, sufficiently to the necessity of providing the best, (and the best are generally those the least complex in their construction,) as well as the most appropriate INSTRUMENTS OF HUSBANDRY; and the implements, utensils, and tools of *their trade*. All occupations require those who follow them, to be closely attentive to the means of carrying them on with facility of execution and consequent profit, by tools appropriate to every operation in their business. But a plough or two, some common harrows, a cart or wagon, with some ordinary tools used in common and minor operations, too generally fill the catalogue of farming instruments and implements. *Ploughs* should be various, and calculated for different uses. Among them is a plough introduced in the hilly country of Virginia by Col. *Randolph*, for ploughing, *horizontally*, mountainous or hilly lands. An account of it will be seen in the 4th vol. of the Philadelphia Memoirs, in a letter from Mr. *Jefferson*. The like practce is followed by the Germans inhabiting mountainous countries; but their ploughs with shifting mould-boards are differently constructed from that mentioned. Every farmer should accommodate his instruments to the local situation and attributes of his farm; as well as to the uses common to all situations. *Harrows* should be constructed for the variety of purposes required in good husbandry. *Coulter* and *hoe harrows*, as well as others adapted to different operations should be possessed by every good farmer: and among the less instruments, the *horse rake* should be better known and more generally used. This saves much manual labour in gathering *hay*; and is peculiarly fitted for raking *grain-fields*, (the borders whereof, after being reaped, should be cut with the scythe, or cleared otherwise of weeds,) so that quadrupely the expense and labour of the operation is gained by the saving of grain which would otherwise perish. See 3d. vol. Philad. Memoirs, 212, 13. There are *hand-rakes* for this purpose, wherewith one labourer will do as much work as two or three with the common rake. The *roller* both plain and spiked, is as essential as any other instrument, yet is not so common as it ought to be. *Riddles* and *screens* for cleaning our grains, are highly improved of late years: yet few farmers possess the best. The *potato riddles* are great facilities, to save time and manual labour, in sizing and separating those roots whilst gathering; yet few possess them at all, and others have them badly constructed. Improved *cutting machines* will be found all essential, when the practice of chaffing hay and other provender becomes duly appreciated. No pains or reasonable expense should be spared, in substituting some effective *threshing* machines for manual labour, and thereby overcoming one of the greatest embarrassments in our rural affairs.

Agricultural Societies.

XXVIII. Encourage the establishment of an Agricultural Society in your neighbourhood, and contribute your share of useful information.—Let it be furnished with a well selected, however small library, on subjects as well practically as theoretically connected with husbandry. Avoid turning it into a club for mere amusement, or topics of controversy and dissension: but let the objects of its meetings be confined to the improvement of its members in the business to which their lives are devoted. *One* of the great objects of such societies should be to enlighten the minds of our citizens, on the subject of *roads*, *canals*, and improving the navigation of rivers, bridges, and other facilities for transport. All the partial inconveniencies of running through farms, payment of tolls and other minor objections, are no more than the dust of the balance, when weighed against their incalculable benefits to agriculture, arts, and manufactures.

Habits of Industry, Economy and Sobriety inculcated. *Savings Bank. Friendly and Benefit Societies. Lancaster Schools.*

XXIX. However unpromising may appear the task, use your endeavours to incite, and with address, mildly and moderately to invite, such of your neighbours who require and will listen to a benevolent *Mentor*, to habits of industry, economy, and sobriety: for such habits are the only requisites in this country, free from the impediments and disadvantages existing in many others, to enable every well disposed citizen to advance his interests and comfort. They are impenetrable shields against poverty and want. Point out to them the advantages of depositing a small portion of their earnings, in *saving banks*, or *well regulated friendly* and *benefit societies*, as sure resources against penury, and relief in sickness and incapacity to labour, as well as for the education of their children; to guard *them* against the miseries of unlettered ignorance and its companion, vice. And for this purpose, encourage and patronize the *Lancastrian* plan of teaching. It is the most practicable and effectual, as well as economical improvement in the means of education of young members of the community, unable in any other way to acquire learning, and to whose wants it is peculiarly adapted, that has ever been introduced among any people, and especially among *our* citizens, enjoying universal suffrage in our republican system of government. Knowledge and information, to qualify them to inquire and judge for themselves and not depend on assistance often seductively rendered, are essential to their freedom and happiness. This knowledge and information can only be acquired, through the facilities afforded by education, and what is called a common one, which must be gained in early life, is fully competent to all useful purposes for which *they* require it.

Religion and morality, to which all earthly considerations are of very inferior importance, will spread their benign influences over minds enlightened by the information such means of attaining it will furnish. No people can be happy and no government, (especially one founded on republican principles,) can be safe, when religion and morality, (twin sisters,) are not the predominant habits of the mass of its population.

Associations should be formed to moderate, if it cannot be totally abolished, the custom of dealing out to labourers, *ardent spirits*;—the most dangerous and destructive foes to the peace of a community, and to the prosperity and happiness of individuals afflicted by a propensity to use them incontinently. Those who furnish the means of destruction, are equally culpable with those who perish under their enticements.

If, out of county funds or by private societies, some premium or medal were given to poor parents, to encourage binding their children, often kept at home in idleness and want, to regular trades, or employments in husbandry, much benefit would arise both to the parents and children. Hiring them to occasional labour, or in manufacturing establishments, conduces nothing to their permanent benefit, either as it regards education, morality, or final settlement in life. There is an unfortunate reluctance on this subject, which might be overcome by honorable notices and distinctions.

Savings placed in the way of accumulation, in the mode recommended, would enable persons in narrow circumstances, in a course of time, to establish themselves at home; or, if they are so disposed, in our new countries, when their families increase in numbers and strength. Plans of such banks and societies and of the schools mentioned, can be readily obtained. Dealers in ruinous temptations to waste time, health, and morality, will not have so many customers, when money, too often devoted to baneful dissipation, is saved for meritorious and salutary purposes: but our country will incalculably benefit by the increased numbers and vigour of its population. Youth and manhood would enjoy innocence and health, and penury would be averted from old age. The less idleness and drink, the more bread. This remark would be unnecessary, could those to whom it is applicable and monitory, be induced to follow the instruction, and feel the excitement, conveyed by the old but evergreen Apothegm:—

"Industry is the right hand of fortune; and frugality her left."

Conclusion and general observations.

XXX If many of these *mementos* should be deemed trite and unnecessary, by men of agricultural intelligence, they will nevertheless, be found useful to beginners. The listlessness of old farmers, often requires something like Dean *Swift's* Flappers. What is considered as trivial, obvious and minute, requiring little exercise of mind or faculty, is overlooked and walked over every day without observation: yet such details and items are as essential to the great concerns of life, as are the letters of the alphabet and the common grammar rules to literature. The Germans have a homely, but expressive axiom,

"*List ist besser als mist*" Skilful management is better than dung.—It has been the aim of the foregoing Notices, to unite the benefits of both. With skilful management, steril and worn lands may be made durably productive.—Without it, the fertility of the richest soils is soon dissipated. Novelty or originality have not been the objects of this defective compendium. Facts and opinions are drawn together presumed to be warranted by experience, or collected from writers of reputation. Nor are any practices or opinions recommended as exclusively preferable, however pointedly they may be mentioned. They are intended as mere suggestions and hints to beginners, and not promulgated with any view to assume superiority of knowledge or judgment, over those who may consider other practices, or opinions, more correct.

It is a melancholly reflection, that the principles and practice of an art, on which the subsistence and comforts of the human race so materially depend, should still be subject to varieties in opinion and contrarieties in practice. Few of even the rude outlines of a subject so copious, can be comprised in a compass so narrow. Nor can it be expected that any more could be noticed, on many points, than the practices respectively mentioned, leaving the details of execution to be sought for in experience from practical monitors, or books.

The ART remains imperfect, although so many ages have elapsed since man was first doomed to cultivate the earth, and countless volumes have been written on the modes of fulfilling his destiny. Some benefit is, however, always derived from the most humble attempt at instruction, if it be received with candour and discriminating judgment. It would be as hazardous and vain, (though leading and settled principles are generally applicable,) to recommend the like practice in dissimilar soils and situations, as it would be for a physician to prescribe the same treatment and remedies, to patients differing in strength, constitution, and habits.

Interesting Extracts.

(CONTINUED.)

No. 3—American Agriculture and Botany.

DE WITT CLINTON.

It has already become difficult to discriminate between our native and naturalized plants; with the progress of time the difficulty will increase, and it ought to be removed as soon as possible. From the vegetable kingdom man derives his principal food and medicine, and it administers to his wants and luxury in a variety of shapes. The botanists ought to attend to the substitution of indigenous medicines, of equal efficacy, to those imported; and also to the discovery of others whose qualities are now unknown, as applicable to the cure of diseases: he ought also to direct his attention to the discovery of indigenous esculents; and of articles for dying, soap, lights, and other branches of domestic economy.—America has furnished maize, or Indian corn, which may be compared with the best of the cereal gramina of the old world; she has also originated the potato, which has administered more to human subsistence than any other production whatever. There are probably other undiscovered legumens and gramina which may essentially contribute to the comfort and support of mankind. It is said that there is a natural meadow of vast extent in the Michigan Territory, which abounds with wild potatoes and artichokes; it would certainly be worth while to ascertain whether they are the real *solanum tuberosum* and *helianthus tuberosus*.(*a*) All the Indians of the northwest have, according to Pike, a species of wild oats for their only farinaceous food: we would rather suppose it to be a species of rice, as it is an aquatic plant; and if each stalk produces, as it is stated, half a pint of grain, it is undoubtedly on object deserving of attention.(*b*)

(*a*) This is probably the *glycine apios*, or wild potato, which is nearly as good as the common, and which was, when boiled, a favourite food of the Indians.

The Jerusalem artichoke, or *helianthus tuberosus*, grows spontaneously over the country, is sometimes brought to our market for sale, and is a wholesome, agreeable vegetable. This plant ought to be cultivated. It produces about four hundred and eighty bushels per acre. It flourishes in almost any soil, bringing invariably, a certain crop, and it is also proof against the severest frosts.

The bulb of arrowhead, or *sagittaria saggittifolia*, boiled, or roasted in hot ashes, was eat by our Indians. It tasted nearly like potatoes. It is commonly an inch and a half long, and one inch and a half broad in the middle, is sometimes as large as a man's fist, and grows in low muddy, and very wet ground. It composes a considerable part of the food of the Chinese, and is cultivated by them. It ought to be carefully guarded against swine, who eagerly devour it. In a valley to the west of the Rocky Mountains, which extends seventy miles, it is found in great abundance, and is a principal article of trade between the inhabitants of that valley and those of the sea coast.

Our Indians also made use of the root of a vegetable which they called *tawkin*, or *tuckah*, and which, Kalm says, is the *arum virginicum*, or wake robin.—When fresh it has a pungent taste, but when roasted it is like potatoes. It flourishes in moist grounds and swamps, and often grows to the thickness of a man's thigh, but is nearly extirpated by the hogs.

They also eat the dried seeds of the *orantium aquaticum*, called by them tawkee; they were boiled in water, and eat like peas, or made into bread. This plant was plentiful in moist and low grounds. Whortleberries, or hucleberries, were dried by them and made into a dainty dish, by being mixed with fresh maize flour, and baked. They also gathered and dried hickory and black walnuts; took out the kernels and pounded them as fine as flour; mixed this substance with water, which took a milky colour, and was as sweet as milk.

The tuckahoe (or tawkee, as Kalm supposes) was probably a native of this state. The lycoperden tuber of Linnæus, called truffles, grows here and in New Jersey, and we have a place called Tuckahoe. These tuberous productions are not the same. The Indians made delicious bread from their farinaceous matter.

According to Lewis and Clarke, the Indians of Columbia river eat the root of a species of thistle, fern, rush, liquorice, and a small cylindric root, resembling in flavour and consistency the sweet potato.

(*b*) This production has been used by the Indians from time immemorial. In a curious book, entitled, A description of the English Province of Carolina, by the Spaniards called Florida, by the French *La Louisiane*, etc. by Daniel Coxe, esq. printed, London, 1741, it is thus described: "besides, this country naturally affords another sort of excellent corn, which is

Lewis and Clarke have pointed out several vegetables unknown to us, which the Indians use. These and many other sources of inquiry are open to us.—The discovery of a new plant gives celebrity to a botanist; and, if useful to mankind, his fame is immeasurably enlarged. Before I conclude this subject, permit me to inquire whether the *cypripedium bulbosum* has ever been seen in this country? I ask this question, because Acerbi in his Travels, has made the following observations respecting it:

"To Mr. Custrien science is indebted for the discovery of a famous plant, viz. *cypripedium bulbosum*, which was at first seen by Rudbeck in 1685, but had never been found since by any botanist; not even by the great Linnæus, who passed this way in July, and consequently a month after it had been in flower. This plant skulks among the underwoods and firs which surround the church of Kemi. It modestly eludes the prying eyes of the passenger, and loves the temperate enjoyment of the sun's rays, which

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the most like oats of any European grain, but longer and larger; and I have been assured by very many credible persons, who, out of curiosity, had divers ways prepared it, that it far exceeds our best oat meal. This is not sown and cultivated by the Indians, but grows spontaneously in marshy places in and by the sides of rivers, like reeds or rushes. The Indians, when it is ripe, take handfuls, shake them into their canoes; what escapes them falling into the water, without any further trouble produces the next year's crop." Hearne saw it as far north as Churchill river, near the 60th degree of north latitude. Ellis, in his account of a voyage to discover a north west passage, mentions, that there are great quantities of wild rice by the sides of the lakes and rivers which run into Hudson's Bay, between the 50th and 55th degrees of north latitude. On the 21st September, Pike stopped at a Sioux village, between Pepin and the falls of St. Anthony, and in about 44 degrees 50 minutes north latitude, and found it evacuated, all the Indians having gone out to gather fols avoin; and he says, that the Indian traders chiefly depend for their support upon wild oats, of which they purchase great quantities from the savages; and that an establishment on Red Cedar Lake, near the Mississippi in the 47th degree of latitude, they give one dollar and fifty cents a bushel for it. The Menomeni, a nation of Indians inhabiting on the northwest of Lake Michigan, are called by the French, Fols Avoins, from this plant, which grows in great plenty among them. Henry, in his Travels in Canada and the Indian Territories, bought wild rice at Lake Saguani in great abundance; he says it grows in shoal water, and the Indians gather it by shaking the ears into canoes. Hennepin says, that among the fols avoins it appears above the water in June, and is gathered in September, and that it produces more meal than European oats. Mackenzie asserts, that the Indians, on Lake Sagenuja, depend principally for food upon fish, and wild rice which grows spontaneously in these parts; that there is abundance of it on the banks of a small river which runs into the Lake of the Woods, about the latitude of 49 degrees; that from Lake Superior to Lake Winnipic, in latitude 50 degrees 37 minutes, "are vast quantities of rice, which the natives collect in August for their winter stores. To the north of 50 degrees, it is hardly known, or at least does not come to maturity;" that the country between Lake Superior and the Mississippi was formerly very populous, and produced wild rice in great plenty.—*Mackenzie's Voyages, Preface.*

Carver, in his travels through North America, states, that the fox river is rendered remarkable by the abundance of wild rice that grows on its shores, and that this grain, which grows in the greatest plenty throughout the interior parts of North America, is the most valuable of all the spontaneous productions of that country. Exclusive of its utility, as a supply of food for those of the human species who inhabit this part of the continent, and obtained without any other trouble than that of gathering it in, the sweetness and nutricious quality of it attract an infinite number of wild fowls of every kind, which flock from distant climes to enjoy this rare repast, and by it become inexpressibly fat and delicious. In future periods it will be of great service to the infant colonies, as it will afford them a present support, until, in the course of cultivation, other supplies may be produced; whereas, in those realms which are not furnished with this bounteous gift of nature, even if the climate is temperate and the soil good, the first settlers are often exposed to great hardships from the want of an immediate resource for necessary food. This useful grain grows in the water, where it is about two feet deep; and where it finds a rich muddy soil. The stalks of it, and the branches or ears, that bear the seed, resemble oats, both in the appearance and manner of growing.—The stalks are full of joints, and rise more than eight feet above the water. The natives gather the grain in the following manner: nearly about the time that it begins to turn from its milky state, and to ripen, they run their canoes into the midst of it, and tying branches of it together just below the ears, with bark, leave it in this situation three or four weeks longer, until it is perfectly ripe. About the latter end of September they return to the river, when each family having its separate allotment, and being able to distinguish their own property by the manner of fastening the sheaves, gather in the portion that belongs to them. This they do by placing their canoes close to the branches of rice in such position as to receive the grain when it falls, and then beat it out with pieces of wood formed for that purpose. Having done this they dry it with smoke, and afterwards tread, or rub off the outside husk; when it is fit for use they put it into the skins of fawns, or young buffaloes, taken off nearly whole for this purpose, and sewed into a sort of sack, wherein they preserve it till the return of their harvest. It has been the subject of much speculation, why this spontaneous grain is not found in any other regions of America, or in those countries situated in the same parallels of latitude, where the waters are as apparently adapted for its growth, as in the climate I treat of. As for instance, none of the countries that lie to the south and east of the Great Lakes, even from the provinces north of the Carolinas, to the extremities of Labrador, produce any of this grain. It is true, I found great quantities of it in the watered lands near Detroit, between Lake Huron and Lake Erie, but, on inquiry, I learned that it never arrived nearer to maturity than just to blossom, after which it appeared blighted and died away. This convinces me that the north west wind, as I have before hinted, is much more powerful in these than in the interior parts, and that it is more inimical to the fruits of the earth, after it has passed over the lakes and become united with the wind which joins it from the frozen regions of the north, than it is further to the westward."

The reasons assigned by Carver, why this grain is not seen in a state of maturity, to the east nor to the south of the Great Lakes, are unsatisfactory. The northwest winds are mitigated in passing over those immense bodies of water, nor is his assertion warranted by the fact. This rice certainly flourishes to the south of the lakes, and we have the authority of Kalm to support us in stating that it grows to the east. The only difficulty exists as to the degree of latitude by which its growth is bounded: and it is believed, that Mackenzie limits its northern extension too much. Kalm says that on the 16th July he saw it growing on the western side of Lake Champlain, near Crown Point, in this state, and in the 44th degree of north latitude; and again he mentions that the zizania aquatica, or folle avoine, grows plentifully in the rivulet, or brook, which flows somewhat below Prairie de la Magdalene, a small village on the eastern side of the river St. Lawrence, about 8 miles from Montreal: and that its seed are gathered in October, and taste almost as well as rice.—Dr. Williams says, that it is a native of Vermont. A considerable difficulty exists with respect to the botanical arrangement and denomination of this plant. Linnæus, and after him Kalm, calls it zizania aquatica. M. Desfontaines, in his Tableau de L'Ecole de Botanique du Museum D'Histoire Naturalle, thus mentions it, quoting Linnæus for his authority, zizania aquatica grows in the northern parts of America, is an annual plant, and is alimentary. Michaux, in his Flora Boreali Americana, makes three species.

1. Milacea, } growing in the watery parts of
2. Clavulosa. } North America.
3. Fluitans—at Lake Champlain.

Of the second he says, this is the zizania of Gronovius, which Linnæus has improperly arranged with the Sloanina.

Persoon, in his Synopsis Plantarum, designates, besides those enumerated by Michaux.

Aquatica, } varieties the first growing in Jamaica
Palustris, } under water, and the latter in the waters of North America.

And Terrestris—on dry land.

Muhlenberg, in his Catalogue of the native and naturalized Plants of North America, enumerates four species of zizania or American rice.

1. Miliacea—millet.
2. Clavulosa—an annual plant, vulgarly called wild-rice, or oats, grows in Pennsylvania, flowers in September.
3. Palustris—marsh; risave—Canada.
4. Fluitans—floating.

Dr. Barton considers the zizania clavulosa of Michaux, as the zizania aquatica of Linnæus, and says that it grows and ripens its seed as far north in America, as the latitude of 50 degrees; and that the zizania milacea of Michaux, is a very distinct species, and that both of the species are eaten by the Indians of the countries adjacent to the lakes. Amidst such a number of clashing authorities, it would not become me to offer an opinion. It is possible, however, that the zizania of Lake Champlain, is only a variety of the folle avoine; and it is probably, a distinct species from the zizania of Pennsylvania. Providence appears to have intended this northern rice as a substitute for the rice of southern climates. Its produce is abundant; its alimentary qualities are undoubted; and the time, may arrive, when the zizania aquatica of the north shall, under the hand of cultivation, attain to as high perfection, and contribute as much to the subsistence of the human race, as the oryza sativa of the south.

In strictness there are but two species of wheat; with beards, and without beards. Winter, summer gray, duckhill, gray polard or fuller wheat, cone wheat, polonian wheat, Siberian spring wheat, Switzerland spring wheat, Egyptian beard wheat, murwaary wheat, brought from Barbary, German spelter, Zeeland wheat, and froment tremaise, so called because it is only three months in the earth, all varieties of one or the other of these species, have been in a great or less degree cultivated in England, and each has some peculiar recommendation. I have seen lands in this state which have produced 50 bushels an acre of this most excellent of the cerealia.

In the Transactions of the Linnæan Society, it is stated, that the blight of wheat, (uredo, frumenti,) in the west of England, which as attributed to an insect, was owing to a fungus which had been long sown in the stem of the wheat. Sir Joseph Banks, in an excellent essay on the blight in corn, annexed

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* Acerbi's Travels through Sweden, &c. vol. I. p. 340.

Adequate and satisfactory notices of our husbandry would occupy too much time. Our attention ought to be drawn to supplies of the best and most powerful manures. As gypsum has no influence in the atmosphere of the sea, it is a great desideratum to find a substitute equally efficient for the Atlantic parts of the state. Fish, peat, sea-weed, street dirt, calcined pyrites, lime ashes, and marl, have been all recommended; and some of them have been tried with great success. The dyking of salt meadows and marshes, and thereby creating excellent land for tillage and grass, and the irrigation of lands, would be very advantageous; and they have not been practised with us except in a few solitary cases. Several plans for a rotation of crops have been proposed, but have not been attended to in a manner due to their importance. The failure of wood not only requires some beneficial system for replenishing our forests, but for accommodating the farmer with substantial fences: hedges of whitethorn or hawthorn may answer a valuable purpose; and it is believed that there are three species with us; two native and one imported from Great Britain. Of all the culmiferous plants, wheat contains the heaviest grain, and it is certainly the most important of the cerelia; it is our great staple commodity; and the utmost care ought to be taken in perfecting and protecting it against the injuries which it receives from various sources. The selection of the best kind for seed is a great object, there being several species; red, white, yellow, bald, bearded, summer and winter. It is obnoxious to injury from cockle, drips, sorrel, commixture of rye, smut, the weavil, the hessian fly, blast, and mildew. The cause of mildew is unknown; the blast sometimes arises from the effluvia of barberry bushes, but generally from the rapid growth of the grain in June. The origin of the hessian fly, and the best remedy against its depredations, are subjects about which there is a contrariety of opinion.(c) Particular attention ought also to be devoted to the selection of the best grasses. Lucern, sainfoin, esparcet, and pimpernel, foreign and perennial grasses, have been mentioned as highly useful. Red clover and timothy are also exotics; but white clover is a native plant, and invariably follows cultivation. The *avena alatior*, or tall meadow oats, was imported some years ago into Pennsylvania, by Dr. Muhlenburg; and is recommended as the best grass for green fodder and hay. The festuca ovina, or sheep's fescue, is preferred in Sweden to all others for sheep. Gmelin says, that the Tartars fix their tents during the summer in those places where there is the greatest plenty of this grass, and that the sepulchral monuments of the ancient Tartars are mostly found where it abounds; which shows that it has been long valued by them. Stillingfleet says, that it is found in abundance in many parts of England and Wales. In the *Hortus Elginensis*, published by a distinguished botanist,* it is mentioned as being in that establishment; and as a hardy perennial plant: it is a vernal grass, and not a native of this country: I have mentioned it thus particularly because it is so important a nutriment to sheep, of which it is believed we have nearly two millions in this state.—Wonderful qualities are ascribed to the Guinea grass in Jamaica, and the fiorin† is highly commended as surpassing all the grasses in its nutricious powers. In selecting the best foreign grasses for cultivation, we ought not to be unmindful of those which nature has provided us at home. In the western parts of this state there are several native grasses deserving of attention. One kind, called the winter grass, resists the effects of frost; and when the snow leaves the ground in the spring, furnishes nourishing pasture. Another species is stated to resist a dry season, and to be in full verdure when all other plants are perishing with drought. A perennial plant, called the wild pea, is said to be superior to clover as fodder; to which it is not only preferred as nourishment, but it has this advantage, that the stock is not so brittle, nor are the leaves so apt to pulverise. There is a highly aromatic plant, collected by the Indians in small quantities, called the Seneca grass.‡(d) When on this subject it is proper to state, that there are certain plants which are pernicious to some kinds of cattle and not to others; for instance, the meadow-sweet§ wastes away the cow but is beneficial to the goat: the long-leaved water hemlock will destroy a cow, whereas the goat browses on it greedily; monk's hood kills the goat, but will not hurt a horse; the

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to Curtis' Practical Observations on the British Grasses, has embraced the same opinion and says that the blight is occasioned by the growth of a minute parasitic fungus, or mushroom, on the leaves stems, and glumes of the living plant; and he further states, that it has long been admitted by farmers, though scarcely credited by botanists, that wheat in the neighbourhood of a barberry bush seldom escapes the blight; that the village of Rollesby, in Norfolk, where barberries abound, and wheat seldom succeeds, is called by the opprobrious appellation of mildew Rollesby: that some observing men have, of late, attributed this very perplexing effect to the farina of the flowers of the barberry, which is in truth, yellow, and resembles in some degree, the appearance of the rust, of what is presumed to be the blight in its early state, and that it is notorious to all botanical observers, that the leaves of the barberry are very subject to the attack of a yellow parasitic fungus, larger but otherwise much resembling the rust in corn. In opposition to the idea, that it is improbable that these fungi are the same, it is remarked that the misletoe, the best known parasitic plant, delights most to grow on the apple and hawthorn, in England, but that it flourishes occasionally on trees widely differing in their nature from both of these, and in the middle states of America it is most frequently found on the nyssa sylvatica, or sour gum, but to the southward upon oaks.

An insect called the tipula tritici, or wheat insect, has destroyed, in some places in England, about one twentieth part of the produce. An insect, called the ichneumon tipulæ, deposites its egg in the larva, or caterpillar, of the wheat fly, and this destroys it. Dr. Darwin gravely proposes, in his Phytologia, to counteract the pernicious effects of insects which produce blight, by propagating the larva of the aphidivorous fly. It is not yet settled whether the hessian fly is of foreign or domestic origin; although a species of tipula, yet it is not the one just mentioned, as I am informed. The farmers on Long Island complain of the septennial ravages of an insect which destroys their barley, and which they denominate the army worm from its numbers.

Dr. Barton has very justly remarked, that it is an object of the first importance to investigate the natural history of those insects; which are peculiarly injurious to us in any way, and that unfortunately our country, as much perhaps as any on this globe, abounds with such insects.

Dr. Smith, the celebrated president of the Linnæan Society, observes, that botany necessarily leads to the study of insects; for it is impossible to investigate plants, in their native situations, without having our attention perpetually awakened by the infinite variety of those active little beings, employed in a thousand different ways, in supplying themselves with food and lodging, in repulsing the attacks of their enemies, or in exercising a more than Asiatic despotism over myriads below them; and he exultingly exclaims, that in England, no branch of natural history, after botany, has, for some years, had more attention paid to it than entomology: while with us, to adopt the language of Dr. Barton, "notwithstanding the importance of the science of entomology, the history of our insects has hitherto excited but little attention.

(c) Mr Green, in his discourse on the botany of the U. States, pronounces, that the fiorin grass is a native of this country; that it has been discovered in Sussex county, New Jersey, on the margin of the Genessee river, and on an island below the city of Albany. Whether this be the same as the fiorin grass of Europe is still a question *subjudice*. In 1749 Kalm visited the island below Albany, and in his journal he has mentioned several of its vegetable productions; the agrostis stolonifera, if growing there at that time, escaped his penetrating eye, but, whether indigenous or not, we know that it has been imported and successfully cultivated; that its alimentary qualities, and its crops, are great beyond example, and that it flourishes in defiance of soil, drought, and climate.

I do not know that saintfoin, or sainfoin, (hedysarum onobrychis which signifies wholesome hay, has succeeded as well in this country as in France, from whence it is derived. The milk of cows fed on it is nearly double, and makes most excellent cream and butter. It fattens sheep better than any other food, and horses require no oats, although hard worked, when they are fed with it. Its increase of produce exceeds that of common grass land about thirty times, and it will last from ten to fifteen years. It yields an aftermarth, or second crop. Curtis, in his Practical Observations on British Grasses, speaks slightly of the festuca ovian, and says that it appears to him applicable only to the purpose of making a fine leaved grass-plot, that shall require little or no mowing. On the other hand, Withering in his botaninal arrangement of all the vegetables naturally growing in Great Britain, intimates that the superiority of the Spanish and English wool is owing to the abundance of this grass in the hilly pastures where the sheep are kept.

Curtis has enumerated twenty-five genera, and one hundred and twenty-three species of grasses growing in Great Britain, and has judiciously, remarked, that to constitute the herbage of a good meadow there must be a combination of produce bateableness, and early growth. *Bateable* is altogether an agricultural or provincial term, and he uses it to express cattle's thriving on the food they eat.

The best grasses of Europe have been neglected, and our indigenous ones have been, in a great measure, overlooked by us. Let our scientific men, our practical men, turn their attention to this and other important branches of husbandry, as yet scarcely noticed, and affording inexhaustable topics for investigation, and let them be encouraged by their labours by the observation of Bacon, that Virgil got as much glory of eloquence, wit, and learning, in the expressing of the observations of husbandry, as of the heroical acts of Æneas."

(d) This grass produces a fine perfume, and has the same effect on tobacco as the vanilla beau. It delights in a rich soil, and may be easily cultivated. It is greatly superior, in its odoriferous qualities, to the anthoxrutum odoratum, or sweet scented vernal grass the only one of that kind which grows in England. Cattle are very fond of it, and it must, produce the most delicious milk, butter, and butcher's meat. There is, however, great danger of its total extirpation, as it is very scarce. Indeed, the same danger is to be apprehended, and the same fatality has, no doubt, occurred in other instances. "Hudson, on the 6th of September, sent a boat to sound the Kills between Bergen and Staten Island, and his men on their return reported, that the "lands were as pleasant with grass and flowers, and goodly trees, as ever they had seen, and very sweet smells came from them." This is not now the case.—The grazing of cattle, the rooting of swine, the plough, and other implements of agriculture, have entirely destroyed a great number of the annual grasses and plants which formerly flourished in this country. Several persons told Kalm, so far back as 1748, that the loss of many odoriferous plants, with which the woods were filled, at the arrival of the Europeans, but which the cattle have now extirpated, might be looked upon as a cause of the greater progress of the fever; for that the great number of those strong plants occasioned a pleasant scent to rise in

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*Dr. Hosack. † Agrostis Stolonifera.
‡ Holcus Fragrans. § Spiæa Ulmaria.

andromeda, or dwarf laurel, is very fatal to sheep; and so is the *kalmia latifolia* which is devoured with avidity by deer.

Greater attention ought to be paid to the cultivation of our fruit; and to the destruction of those noxious insects and worms which have, within a few years, injured it beyond measure. Our soil and climate are admirably adapted to some of the most delicious fruits. The Spitzenberg apple is said to have been discovered accidentally in the vicinity of Albany; and it is only rivalled by the Newtown pippin, whose excellence is also, probably, of local origin and which reminds us of the *malum aureum* of the ancients. We

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the woods every morning and evening. The vegetable kingdom of our western country is uncommonly rich, and luxuriantly abundant, because cultivation has been but partially extended to it. Hogs have produced great destruction among all tuberose and bulbeous plants. Even the laurel tree of Carolina has become almost extinct in many parts of the country, owing to the depredations of domesticated animals.

Although some plants, like some animals, are no longer seen in our country, yet the field of botanical investigation is immeasurable and boundless. Our country embraces every variety of soil and climate, mountains, rivers, lakes, and salt waters, and is the favourite depositary of the vegetable riches of the earth. In the United States we are yet in the infancy of this science.

The first edition of Linnæus' Species Plantarum contains only 7,300 species. A curious amateur of botany took the pains to enumerate the plants described in Dr. Turton's translations of Gmelin's edition of the Systema Naturæ, and in a work of Wildenow, and found 2046 genera, and 19,803 species of plants, of which 688 genera have but one species; 263 but two; 174 but three; and 124 but four. And it is supposed that the whole number of described plants amounts to about 22,000.

Mr. Jacob Green has annexed to his well-written and interesting Address on the Botany of the United States, (delivered before the Society for the promotion of Useful Arts,) a catalogue of plants, indigenous to the state of New York. This list, which Mr Green admits to be incomplete, contains about 403 genera, and 1,283 species.

The catalogue of the hitherto known native and naturalized plants of North America, made by that indefatigable and learned botanist Dr. Muhlenberg, contains but 863 genera, and not 2800 species. It is not unreasonable to estimate the whole number of plants in the United States, and their territories, at 8,000 and as yet we have not described 3000. What an opening does this afford for the operation of scientific inquiry? No wonder that Linnæus was so anxious to visit this country. Catesby, in his Hortus Europæ Americanus, published in 1767, truly observes, that a small spot of land in America has, within less than half a century, furnished England with a greater variety of trees, than has been procured from all other parts of the world, for more than a thousand years past.

From information which has recently reached me, I am persuaded, that our Dutch ancestors paid more attention to the improvement and natural history of the country, than has been generally imagined. We are, as yet, greatly in the dark with respect to events and observations during their occupancy of New Netherland, as they termed their country; but the means of information are amply within our reach. De Laert wrote a book respecting it, wherein he gives a very particular account of the Indians; and Megapolensis, an eminent Dutch minister, who formerly lived in this city, also published a work on this country, when a Dutch province; and I have now before me a manuscript translation made by the Rev. Dr. Basset, of Dr. Van der Donk's History of New Netherland, published in 1655. It is very interesting, and it is to be hoped, that that worthy gentleman will meet with sufficient encouragement to publish it, and also correct translation of De Laert ought, also, to be particularly attentive to the introduction and naturalization of the best foreign fruits: and the importance of this will be duly appreciated when we consider the origin of those which are now most esteemed. The cherry and filbert are from Pontus; the apricot from Epire; the peach from Persia; the citron from Media; the pomegranite from Carthage; the quince from Cathonea; the plum from Damascus; the best pears from Alexandria; and the olive and fig from Greece.—*Discourse before the Lit. and Phil. Society of N. York.*

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and Megapolensis, for which no man in this country is better qualified. Van der Donk states, that a certain surgeon, a resident of New Netherland, had formed an extensive botanical garden, in which he planted many medical roots, which he cultivated from the woods adjacent to his abode; but by the removal of that worthy gentleman from the country, his humane and patriotic exertions were lost to the world. This, I undertake to say, was the first botanical garden established in this part of America. It appears, also, from this work, that most of the medicinal and other herbs, with which the country abounds were known to our Dutch forefathers; that they took uncommon pains to introduce the best cereal gramina, legumens, and excellent vegetables and fruit of various kinds, and have even cultivated canary seeds; that they introduced the white and red, the cornelian and stock roses, wall flowers, tulips, imperial flowers, the white lily, and the lily of the valley, ladies' rose, violet and gold flower, and that the country abounded with flowers peculiar to it, of the most beautiful kind, to which the European was an entire stranger, viz: the sunflower, the red and yellow lily, the morning glory, the white, yellow and red marygold, a species of wild eglantine, the different kinds of the bell flower, and many others.

Our Dutch ancestors also turned their attention to improving the dyes of the country; great hopes were entertained from the wild indigo; and they not only supposed that the common indigo might be raised to great advantage, but they actually tried the experiment. Seed was imported from Holland. The first attempt failed, owing, as it was supposed, to an extraordinary drought which prevented the plant from coming to maturity: but another experiment completely succeeded; the seed was sown near New Amsterdam, (New York) and a great crop was obtained, specimens were sent to the mother country, where good judges pronounced it of a superior quality. But what is still more extraordinary is, that there is reason to believe that it was contemplated to introduce the famous orchila weed. When the Spaniards discovered the Canary Islands, they sought for it as eagerly as they did for gold; it was probable, that it was made use of to produce the gertulian purple of the ancients; and they also had in their view other vegetable dyes which we cannot now accurately designate. "The *crap plant*," says Van der Donk, "for dying red is not cultivated in New Netherland, but it is not to be questioned, that if it were tried it would yield well."

I must repeat my wish, that this curious work may soon see the light. It appears from it, that the country was so remarkably healthy at that time, that it was a strange thing to hear of a person being sick; that the east wind did not extend far west; and that the climate was as mild at that period as it is now.

From the Practical American Gardener.
[Published by Fielding Lucas, jun.]

For the Month of July.

Clean and prepare all vacant ground, where the crops have come to maturity and have been taken off, that it may be in order to receive fresh seeds, and plants such as may be made use of in autumn and winter.

Peas.

The early crop of hotspur peas, will in this month be ripening for seed; and as it is not so necessary in the middle states, to change all kinds of seeds every year, as in most parts of Europe; this valuable article may be planted in the same ground, for several successive years, and the seed materially improved, so as to produce double the quantity by attending to the following directions.

None, from the rows of peas which are intended for seed, on any occasion, ought to be gathered, until they are fit for seed, then go over the rows, select all the pods, which appear to have five peas and upwards in them, shell them out carefully, and afterwards, with a coarse riddle, which will just admit the smaller peas through, separate the small ones from the rest (the small ones to go into the general mass) the best to be reserved for your own sowing. The second year you may reject all pods which have not six, and upwards in them, handpick, and shell them in like manner, and so continue the third and fourth years, when the peas will have attained their full maturity, and some of the pods will have ten and eleven fine large peas in them, and if the same care is observed ever after, they will not degenerate, but will continue to produce as before mentioned, without being so subject to the blight.

The small dwarf pea may be treated in the same manner, with an equally good effect, but as the seed is small, of course a riddle suited to their size must be used.—The other sorts might probably answer as well, if managed in the same manner; but these have not been proved.

Potatoes.

Early this month, if not done in the last, a fall crop of potatoes, may be planted in the middle states. The ground may be furrowed out, pretty deep, let the furrows be three feet apart, and a good coat of rotten manure, spread in them, about three inches thick; place cuttings of the potatoes, having two or three eyes in each, about ten or twelve inches apart, in the rows, and cover them with about six inches of earth. A few days before they shoot up through the ground, harrow them over, with the back of the harrow, which will considerably check the growth of the weeds, and after they appear above ground, a small harrow may be run over the ground, between the rows, which may be expeditiously done; after which the hoe and plough must be used to destroy weeds.

The potatoes planted early in the spring, will now be fit for use.

Cauliflowers.

The late sown cauliflowers, intended for winter use, may now be planted out.

In planting this crop, take every opportunity of showery or moist weather, plant them at the distance of two and a half feet each way; let them be immediately watered, and afterwards frequently, until they have taken root.

Cabbage seed.

Sow some of the early York Battersea and sugar-loaf cabbage, for a supply of young greens during the autumn. They are by some called coleworts, and have superceded the true coleworts, which were formerly propagated, for boiling as greens.

Some Savoy seed may also be sown at this time, for a late winter crop.

Coleworts.

Those who wish to have the true coleworts, may sow them early in this month, to be planted out in the beginning of next month, for winter greens, but the early York, &c. cabbages are preferable, to be used instead of these.

Planting Cabbages, Savoys, Borecole, &c.

Plant out your late crops of cabbages, savoys, borecole, broccoli, turnip cabbage, Brussel's sprouts, Jerusalem kale, and all others of this species, in moist or cloudy weather; let them be planted, as formerly directed, and immediately watered, which must be frequently repeated, until they have taken root and begin to grow. Lay a fresh cabbage leaf over each plant, for a few days, which will protect them from the sun. —Some seed of the green curled borecole may be sown for a late crop.

Small Sallading.

Continue to sow small sallading, every eight or ten days; shade them with mats from the mid-day sun, and water them frequently.

Lettuce.

Thin and transplant the lettuces sown last month, water them immediately and repeat it when required.

Sow more lettuce seed, the beginning, middle, and particularly the latter end of the month, for a regular succession. The white Silesia, brown Dutch, India, grand Admiral, and Saxony cabbage lettuce; are all good kinds.

Carrots.

Towards the end of this month sow some early horn carrot seed, in drills, to raise young roots for autumn and winter. When the plants are up, an inch or two, thin them to five or six inches.

Celery.

Plant out into trenches a full crop of celery, for autumn and winter; let this be performed as directed in June. The red stalked celery, branches very white, and is generally preferred to any other.

Earth up the early crops of celery, which have been planted out in trenches, first pulverizing the earth, and then laying it neatly to both sides, preserving the tops and hearts of the plants free; repeat this earthing, every eight or ten days, or oftener, until the plants are of proper size for use.

Sow more seed in the first week of the month, for a late crop.

Turnips.

Between the twentieth of this month, and the middle of August, a principle crop of turnips may be sown for autumn and winter use; but the earlier, in that period of time, they are sown, the larger size will the roots attain to.

Transplanting and sowing Endive.

Plant out a sufficient quantity of the best and most flourishing endive. It requires a good, strong, moist ground, well dunged. Put in the plants a foot asunder every way, water them immediately, and repeat it every evening till the plants have taken root.

Sow green Endive, also white, and Batavia, twice this month. They should be sown in ground well prepared, and sown thin. Water them, frequently in dry weather, both before and after the plants appear.

Spinach.

In the last week of this month, sow a crop of the round seeded spinach for autumn use.

Radishes.

Radishes, of every kind, may be sown in the last week of this month; but particularly, the white and black Spanish, or winter radish, of which a full crop ought to be sown for autumn and winter.

Sow, likewise, some of the short top salmon and purple, also the turnip rooted radishes. Let all these seeds be now sown on moist grounds.

Artichokes.

In order to have artichokes in perfection, in the first week of this month, all the small heads, which are produced from the sides of the stems, must now be cut off to allow the main head to attain its full size; these small heads may now be dressed for the table.

The maturity of a full grown artichoke, is apparent by the opening of the scales; and it should always be cut off before the flower appears in the centre.

As soon as the heads are all taken from any stem, it should be immediately cut down close to the ground.

Cardoons.

Plant cardoons in the first week of this month, if not done in the last month, as has been directed. Earth up in dry weather, those planted at that time; tie the leaves previous to the earthing of them with a hay-band, which will preserve the plants; the earth to be raised up half their height.

Melons, Cucumbers, Squashes, Pumpkins and Gourds.

The crops of these should now be kept very clean and free from weeds, the space between the hills must be carefully hoed, without injuring the vines.

Melons and Mangoes.

The first week in this month, sow the seeds of the long smooth melon, for mangoes (in the middle states) as has been directed.

Cucumbers for Pickling.

From the first to the tenth of the month, sow a general crop of cucumbers for pickling, treat them as directed, in May and June. The green cluster cucumber is the greatest bearer.

Some of the early frame, or short prickly kinds, may be sown in the middle of the month, for a late crop.

Kidney Beans.

Kidney beans of the dwarf kinds may be planted, in the beginning, middle, and latter end of this month. It will be best to water the drills before planting, and if they have been steeped in pond water, for five or six hours, before planted, they will shoot the sooner.

Egg-Plant, Red Peppers, and Tomatoes.

In the first week of this month, if not done before, plant out these, as directed last month. Give them shade and water until they have fully taken the ground.

Leeks.

You may still continue to plant Leeks, as before directed.

Garlick, Shallots, and Rocambole.

When the leaves of these plants wither, pull up the roots, and dry them in the shade for a week or ten days.

Onions.

Pull onions when the leaves wither, do this in dry weather, and leave to each onion, about four inches of stalk. Spread them on dry ground for ten or fifteen days turning them every other day. Then clean them from the earth, and spread them on a dry room floor, leave the windows open in dry weather, three or four weeks, after that keep out the air, and turn the onions occasionally, picking out such as may be injured.

Collect Seeds.

Collect all kinds of seeds, as they come to full maturity, cutting off or pulling up the stems, with the seed thereon, as they ripen, and spread them in an airy place, where they can receive no wet, in order that the seeds, may dry, and harden gradually: carefully turn them occasionally, and observe not to lay such a quantity together, as will cause them to ferment. When they are sufficiently dry, beat out and clean the seeds, and lay them by in boxes, or bags, labelling each kind.

Herbs.

Gather herbs for drying and distilling as they come into flower, and dry them in the shade. Gather Camomile, marygold, and such other flowers as may be wanted, which may now be in bloom. Spread the flowers in the shade till sufficiently dry, and then put them in paper bags, &c.

Sage, hysop, thyme, lavender, winter savory, and many other kinds, may still be propagated, by slips of the present year's growth, giving them shade and occasional watering's till rooted. Plant them about three inches in the ground.

Sowing Peas.

In the last week of the month, sow a crop of the golden hotspur peas. Water the drills, and let the peas be soaked in pond or soft water, five or six hours, before sowing—should the season prove moist, they will produce early in September.

General Remarks.

Earth up your cabbages, okras, peas, kidney beans, &c.; this will greatly refresh them, and protect their roots and fibres from the intense heat of the sun.

Diligently destroy weeds, before they seed, and immediately carry them out of the garden. Give water, whenever it appears necessary, and let this be always done of an evening, that it may have time to settle down to the roots, before the morning sun exhales it.

Pull up the stalks of beans, cauliflowers, cabbages, and the haulm of peas, and other plants which have done bearing, and clear the ground; for if these are suffered to remain, they may harbour vermin to the injury of the adjoining copy.

THE FARMER.

BALTIMORE, FRIDAY, JULY 2, 1819.

We ought to apologise to our patrons, for the want of *variety* in this number: it was occasioned by the desire to dispose of two long articles, which, however interesting, and they are highly so, are, on account of their length, not so well suited to a weekly paper.

We have on file, original communications of the most valuable character, from various quarters, which we are impatient to lay before our readers, having no doubt but they will be pleased, as we have been, at the manifestation of ardent and increasing zeal for agricultural improvement in Maryland. The example set by a few gentlemen, no less eminent for their industry than for their abilities, in writing on agriculture under their proper signatures, has had the best effect.

The proceedings of the Agricultural Society of Prince George's, have been politely communicated through their Secretary, by order of the Society, for insertion in the American Farmer. They claim an early insertion, both on account of their priority of date, to other communications received, and from the intrinsically able and interesting nature of their contents.

The address of Doct Jos. E. Meuse, on *Entomology*, to the Agricultural Society of Maryland, at Annapolis, which they also did us the honour to request might have a place in this papear, was not received until the moment we are writing. It was published in the Maryland Gazette, on the 17th of June, but somehow slipped through our fingers. We have not even leisure now to read it, but we shall be egregiously deceived, if it be not every way worthy of the particular notice bestowed on it by the respectable society to which it was addressed. We hope to be able to give it a place in the Farmer after the next.

The Plough Boy.—Four numbers of a weekly paper, printed in Albany, under this title, have reached us. In size, plan and objects, the *Plough Boy* nearly resembles the American Farmer; But not being printed so close, does not, perhaps, contain so much. The deficiency in the quantity however, if any, is amply made up, in the superior quality of the matter. The price of the Plough Boy is but 3 dollars per annum; the value ten times that to those who will *read*—and to those who think that nothing is to be learned by reading, in relation to agriculture, it is useless to say any thing about it.

Subscriptions for the Plough Boy will be received at this office with much pleasure.

PRICES.

Very little change, if any, has taken place in the more bulky articles of country produce since our last. Tobacco remains as at that date—Corn has been a little depressed—say now, at 48 to 50 cents, per cargo—Red Wheat is a little improved, $1 15 was asked for it yesterday, and we heard of none selling under that—No new Wheat yet in market.

From late London papers.

THE CIRCASSIAN FAIR.

This fair stranger was lately introduced by His Excellency the Persian Ambassador to upwards of twenty ladies of distinction. She was elegantly attired in the costume of her country; her dress was a rich white satin fringed with gold, with a bandeau round her head, and wreaths of diamonds. She received her visiters with graceful affibility, and they were highly pleased with her person and manners. She is not, as has been represented, short and slender, she is of the middle stature, of exquisite symmetry, rather *en bon point*; her complexion is of a brownish cast, her hair a jet black, with beautiful arch black eye-brows, handsome black penetrating eyes, her features regular, and strikingly handsome. The ladies were highly gratified, and passed great encomiums on the elegance of her person.

CURIOUS CIRCUMSTANCE.

There is now in the possession of Mr. Hayes, a butcher of Southampton, a pig, with a *wooden leg*, on the off side before, and it appears to walk with little lameness or inconvenience. This pig belonged to a disbanded soldier, who, having seen many operations performed on his heroic comrades, on the glorious field of Waterloo, remembered enough of surgery to enable him to practise amputation with success on the poor animal, when an accident left no alternative between the loss of a limb or a premature death.

IMPROVED HARROW.

From the Memoirs of the Virginia Agricultural Society.

TO DR. JOHN ADAMS.

Secretary of the Virginia Society for promoting Agriculture.

June 6th, 1818.

Dear Sir—Permit me, through you, to present our Society with the enclosed drawing of a Double-Harrow, designed principally for the culture of Indian Corn. It is an impliment which I can venture to recommend, having used it for two seasons, I think, with great advantage. It requires two horses or mules to pull it, and will execute as much work at one stroke, as a single-horse plough will at six or eight. The teeth, which are thirteen inches long, one inch square at the large end, and tapered to something less than three quarters, and cutting within five inches of each other, penetrate to the depth of about six inches; and pulverize the land thoroughly, (if not very stiff,) from one water furrow to another, where the beds are only five and a half feet wide. As the Harrow is intended to run on each side of the corn, you may make the teeth next the corn cut as near as you please by screwing up the coupling bolts which are long enough to admit also of a considerable extension; the drawing then as close as practicable, diminishes much the labour of the hand hoes, which after these Harrows, have little else to do, than merely to weed the narrow space left between the teeth running next the corn. I have used them both before planting, and immediately previous to nursing. Their superiority to any stiff harrow that ever I have seen, consists, as the drawing will show, in the coupling bolts, allowing all the teeth, ten in number, to act at the same time, however irregular the surface may be over which they move.

The scale of the drawing is one inch to the foot, the size of the timbers four and a half by three and a half inches.

I remain, Dear Sir,

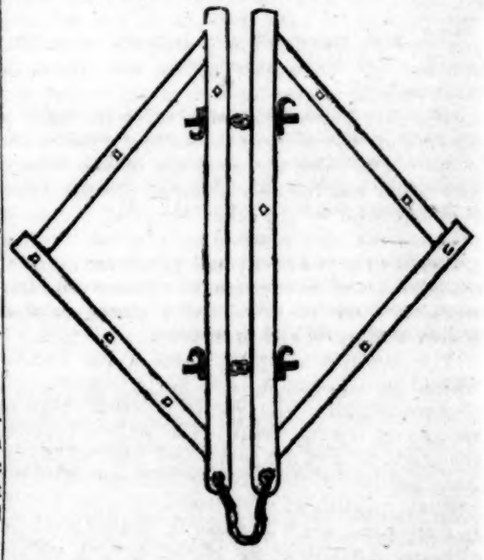
Your obedient servant,

JAMES M. GARNETT.

P. S. Although the following directions, in regard to the harrow-handles, may not generally be thought necessary, yet as some may think they ought to be given, I will add them. The proper place to insert the handles is about one foot from the hinder end of the pieces through which the coupling bolts pass. These handles should slope a little backwards, and having no connexion, as in a plough, should diverge from each other at the top, in such a way as to keep the handles at a convenient distance apart.

J. M. G.

☞ In the following engraved sketch, the scale is *half* an inch to the foot.



ANOTHER TRAVELLING MACHINE.

Mr. Birch, the coachmaker, has presented the Duke and Duchess of Kent, with a vehicle, called the *Velocimanipede*, calculated to carry three persons, without a horse, and weighs only 100 pounds weight. The centre, or body of the carriage, is supposed to be for a female; the front is for a gentleman to sit on a narrow saddle to guide it. At the back is a small dickey to work the hind wheels by machinery. It went over a distance of ground of one mile in three minutes, and it could be kept up with ease at eight miles an hour. Their royal highnesses expressed their gratification at the ingenious contrivance of a vehicle to carry three persons without a horse, particularly at the simplicity of the construction, and the ease with which it is worked.

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FOR
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